

ABSTRACT

In a stacked-layer type photoelectric conversion device, a plurality of photoelectric conversion units (3; 5) are stacked on a substrate (1), each of which includes a one conductivity-type layer (31; 51), a photoelectric conversion layer (32; 52) of substantially intrinsic semiconductor and an opposite conductivity-type layer (33; 53) in this order from a light-incident side. At least one of the opposite conductivity-type layer (33) in a front photoelectric conversion unit (3) arranged relatively closer to the light-incident side and the one conductivity-type layer (51) in a back photoelectric conversion unit (5) arranged adjacent to the front photoelectric conversion unit (3) includes a silicon composite layer (4) at least in a part thereof. The silicon composite layer (4) has a thickness of more than 20 nm and less than 130 nm and an oxygen concentration of more than 25 atomic % and less than 60 atomic %, and includes silicon-rich phase parts in an amorphous alloy phase of silicon and oxygen.